



ECOTOXICOLOGY OF ALKYL SULFATES

Applicable to these current Stepan products:

POLYSTEP® B-3	POLYSTEP® B-5	STEPANOL® ALS 25
STEPANOL® AM	STEPANOL® AM-CIT/MIT	STEPANOL® AM 30-KE
STEPANOL® AMV	STEPANOL® AMV PCK	STEPANOL® DCFAS-F
STEPANOL® DCFAS-N	STEPANOL® DCFAS-P	STEPANOL® DCX
STEPANOL® DX	STEPANOL® LCP	STEPANOL® LCP-E
STEPANOL® ME-DRY	STEPANOL® ME-DRY-E	STEPANOL® SLS PASTE™
STEPANOL® WA-100 NF/USP	STEPANOL® WA-EXTRA	STEPANOL® WA-EXTRA-E
STEPANOL® WA-EXTRA HP	STEPANOL® WA-EXTRA K	STEPANOL® WA-EXTRA PCK
STEPANOL® WAT	STEPANOL® WAT-E	STEPANOL® WAT-K
STEPANOL® DX-AS 165 N	STEPANOL® DX-AS 165 P	STEPANOL® DX-165
STEPANOL® WA-EXTRA PC	STEPANOL® WA-EXTRA HA	

Applicable to these inactive Stepan products:

STEPANOL® LCP	STEPANOL® WA-SPECIAL	STEPANOL® WAC
STEPANOL® WAQ		

Toxicological Information:

Test/Conditions	Results/Classification*	References**
Acute aquatic toxicity to fish (96 hr)	LC50 = 29 (C12) to 1.3 (C12-18) mg/L (slightly to moderately toxic)	ECHA REACH Dossiers
Acute aquatic toxicity to daphnia (48 hr)	EC50 = 5.55 (C12) to 1.37 (C10-16) mg/L (moderately toxic)	ECHA REACH Dossiers & HPV Assessment
Acute aquatic toxicity to alga (72hr)	ErC50 > 6 (C12-14) to > 1 (C10-16) mg/L (moderately toxic)	ECHA REACH Dossiers & HPV Assessment
Chronic aquatic toxicity to fish (42 days)	NOEC ≥ 1.36 mg/L	ECHA REACH Dossiers
Chronic aquatic toxicity to daphnia (21 days)	NOEC = 0.14 mg/L	ECHA REACH Dossiers
Chronic aquatic toxicity to		

alga (96 hr)	NOEC = 0.6 mg/L	ECHA REACH Dossiers
Toxicity to microorganisms (Activated sludge respiration inhibition test)(3 hr)	ErC50 = 135 (C12-14) to 680 (C12-18) mg/L	ECHA REACH Dossiers
Toxicity to Terrestrial Plants (<i>Lupinus albus</i>) (2 days)	EC50 = 384 mg/L	HPV Assessment

* Toxicity testing summarized above, have been conducted in the pH range of 7.5-8.5. The most important factor influencing the ecotoxicity of the Alkyl Sulfate category is the length of the Alkyl chain. The aquatic toxicity increases as the carbon chain increases. It has been shown that toxicity is fairly independent from the counter-ion.

References:

** ECHA REACH Dossiers for Alkyl Sulfates.

** Alkyl Sulfates, Alkane Sulfonates and Alpha Olephin Sulfonates. SIDS Initial Assessment Report 2007.

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